CLAIMS

What is claimed is:

1. A method for determining image properties of an optical system comprising at least two optical elements whose spatial relation with respect to each other can be changed, the method comprising the following steps:

a) measuring an overall image defect of the optical system, wherein measuring light traverses the at least two optical elements;

b) representing the measured overall image defect as a linear combination of base function of an orthogonal function set;

c) changing the spatial relation of the at least two optical elements;

d) repeating steps a) and b), thereby obtaining a new linear combination of the base functions of an orthogonal function set; and

e) calculating the image defect of at least one of the at least two optical elements usig the representations obtained in steps b) and d).

2. The method of Claim1 in which at least one of the at least two optical elements can be rotated about the optical axis.

3. The method of Claim 1 in which air image data are used for measuring the overall image defect in steps a) and d).

4. The method of Claim 1 in which, for the determination of the overall image defect in steps a) and d), wave front data of an imaging light bundle are measured behind a projection objective lens.

5. The method of Claim 1 in which Zernike functions are chosen as orthogonal function set.

6. A method for determining image properties of an optical system in which at least one optical element is movable relative to at least one stationary optical element, the method comprising the following steps:

a) measuring an overall image defect of the optical system, wherein measuring light traverses the at least one movable and the at least one stationary optical element=

b) representing the measured overall image defect as a linear combination of base functions of an orthogonal function set;

c) calculating a target position for the at least one movable optical element based on the representation of the measured overall image defect as obtained in step b) so as to reduce the overall image defect; and

d) move the at least one movable optical element to the target position as calculated in step c).

7. The method of Claim 6 in which the at least one movable optical element can be rotated about the optical axis.

8. The method of Claim 6 in which air image data are used for measuring the overall image defect in step a).

9. The method of Claim 6 in which, for the determination of the overall image defect in step a) wave front data of an imaging light bundle are measured behind a projection objective lens system.

10. The method of Claim 6 in which Zernike functions are chosen as orthogonal function set.